

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US2004/037542

International filing date (day/month/year)
10.11.2004

Priority date (day/month/year)
10.11.2003

International Patent Classification (IPC) or both national classification and IPC
G03F7/20

Applicant
NIKON CORPORATION

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1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/037542

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|--------------|
| Novelty (N) | Yes: Claims | 3-30,32-36 |
| | No: Claims | 1,2,31,37-44 |
| Inventive step (IS) | Yes: Claims | 4-30 |
| | No: Claims | 1-3,31-44 |
| Industrial applicability (IA) | Yes: Claims | 1-44 |
| | No: Claims | |

2. Citations and explanations

see separate sheet

Re Item V.

- 1 Reference is made to the following documents:
D1 : US 6 253 464 B1 (KLEBANOFF LEONARD E ET AL) 3 July 2001 (2001-07-03)
D2 : US 2002/096647 A1 (MOORS JOHANNES HUBERTUS JOSEPHINA ET AL)
25 July 2002 (2002-07-25)
D3 : PATENT ABSTRACTS OF JAPAN vol. 1999, no. 04, 30 April 1999
(1999-04-30) & JP 11 026376 A (CANON INC), 29 January 1999 (1999-01-29)
- 2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.
 - 2.1 Document D1 discloses (the references in parentheses applying to this document):
An extreme ultraviolet lithography system (column 3, lines 4 - 11, column 4, lines 54 - 64) comprising:
a reticle (120, cf. figure 1) having a top and a bottom surface;
a plurality of chambers for storing or utilizing the reticle (implicit); and
a top plate (126, cf. figure 1) and a bottom plate (bottom part of 110) that are proximate to the top and bottom surface of the reticle, respectively, the top and bottom plate being maintained at a lower temperature than a temperature of the reticle (claim 1), wherein the reticle is thermophoretically protected from contamination.
 - Therefore, **claim 1** is not novel.
 - The same applies *mutatis mutandis* to **claims 31, 40 - 44.**
 - 2.2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 37 is not new in the sense of Article 33(2) PCT.
Document D2 discloses (the references in parentheses applying to this document):
A lithography system (abstract) comprising:
a pod (cassette 800, cf. figure 9A, fulfills the definition of a pod according to the application; cf page 1, line 25 of the present application) suitable for containing a

reticle

a loadlock chamber (925; cf. figure 9B, paragraph 0074) having a first surface (upper surface of 925; cf. figure 9B) that contains a first gate valve (919; this base serves as a gate valve to the chamber 925), wherein the pod is attached to the first surface of the loadlock chamber (cf. figure 9B the cassette is attached to the gate valve surface 919), and wherein the first gate valve allows the reticle to be transferred from the pod into the loadlock chamber (cf. figure 9C, paragraphs 0079 - 0082); and
a lid (915; cf. figure 9B) that seals the pod between the lid and the first surface of the loadlock chamber (paragraph 0071) such that a low pressure environment can be formed around the pod (implicit).

Therefore, **claim 37** is not novel.

- 2.4 Certain dependent claims do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT with respect to novelty or inventive step:

D1 discloses (figure 1) the additional feature of **claim 2** of the top and bottom plane surface being at least as large as the surface area of the reticle.

The additional feature of **claim 3** of the bottom plate having support stems would be provided as a matter of routine.

The additional feature of **claim 32** of a pair of blinds positioned about the passageway to leave it open or closed would be provided as a matter of routine (any commonly employed reticle masking system would provide such a passageway blocking; cf. D3).

The additional feature of **claim 33** of the pair of blinds being maintained at a temperature lower than that of the reticle would be provided as a matter of routine (cf. D3).

The additional feature of **claim 34** of the reticle chamber being at a low vacuum pressure level would be provided as a matter of routine (cf. D4).

The additional feature of **claim 35** of the optics chamber being maintained at a lower pressure level than the reticle chamber would be provided as a matter of routine (cf. D4).

The additional feature of **claim 36** of a pair of heat shields wherein each heat shield covers and protects a respective one of the blinds from heat absorbed from ultraviolet radiation would be provided as a matter of routine (cf. D3).

D2 discloses (933, cf. figure 9B) the additional feature of **claim 38** of the loadlock chamber comprising a second gate valve that can be selectively opened to allow a reticle handler to transport a reticle into and out of the loadlock chamber (figure 9H).

D2 discloses (implicit) the additional feature of **claim 39** of the pod having a pressure equalization between the volume inside the pod and outside the pod.

3. The combination of the features of claims 4 - 30 is neither known from, nor rendered obvious by, the available prior art.

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